7.0 SUMMARY OF OTHER ENVIRONMENTAL MANAGEMENT ISSUES

Based on the environmental impacts disclosed in Chapter 4, this chapter summarizes a range of issues that an EIS must address. These issues are identified at 40 CFR 1502.16, describing the analysis of environmental consequences in an EIS. The last two sections in this chapter describe mitigation measures (as required by 40 CFR 1502.16(h)) and identify unavoidable adverse impacts (as required by 40 CFR 1502.16).

7.1 Short-Term Uses Versus Long-Term Productivity

The Council manages the groundfish fisheries to keep total mortality within sustainable harvest levels. Current harvest policies were set first through Amendment 11 to the FMP, and then revised in 2001 to account for recent scientific information on the need for more conservative harvest levels for low-productivity rockfish. The bycatch and bycatch mortality minimization programs examined in this EIS are intended to reduce bycatch mortality but do not address overall harvest policies. To the extent that bycatch mortality of a particular species is reduced, more of that species is available for directed harvest, meaning that these programs do not directly affect short-term resource uses. The area where bycatch mitigation programs can positively affect long-term productivity is in accountability. For fisheries where bycatch estimates are too low or nonexistent, it is possible for total mortality to exceed intended amounts without notice. Over time, total mortality would be higher each year than had been expected, potentially affecting long-term productivity of unmonitored stocks. The Council's preferred alternative would link bycatch reduction incentive programs to vessel monitoring, increasing quantity and quality of bycatch in both the near and longer term. As these data are used to improve bycatch estimates, unaccounted-for bycatch will decrease, ultimately improving long-term productivity through more informed management of total mortality limits.

7.2 Irreversible Resource Commitments

An irreversible commitment represents some permanent loss of an environmental attribute or service. The use of non-renewable resources is irreversible; unsustainable renewable resource use may be irreversible if future production is permanently reduced or, at the extreme, is extinguished.

The use of non-renewable energy resources, such as fossil fuel, represents a pervasive irreversible commitment associated with the proposed action, because fishing vessels are mechanically powered. The use of energy is discussed below in Section 7.4.

The preferred alternative action does not by itself represent an irreversible commitment because renewable resources are being managed within an adaptive framework. If a stock were extirpated or species went extinct, this would represent an irreversible resource commitment. The preferred alternative is intended to reduce bycatch and bycatch mortality in the groundfish fisheries, as well as to increase the quantity and quality of data available on bycatch in the groundfish fisheries. Under the preferred alternative, particular fisheries and sectors within those fisheries will be examined for applicability of full retention, sector/vessel bycatch caps, and dedicated access privileges programs. Future full retention programs will have to be examined for the portion of the

catch that is expected to be non-target and not desired or useable for retention. Full retention programs that result in moving the disposal of fisheries waste from the marine to terrestrial environment may represent an irreversible resource commitment. Dead biomass from discarded offal or bycatch in marine fisheries feeds marine animals. Were that dead bycatch disposed of on land, a food source would move from the marine to terrestrial environment. Sector/vessel cap programs and dedicated access privilege programs may only present the same possible irreversible resource commitment if they include full retention requirements.

7.3 Irretrievable Resource Commitments

A resource is irretrievably committed if its use is lost for time, but is not actually or practically lost permanently. The preferred alternative would lead to an FMP amendment that would require bycatch reduction measures to be included in future full retention, vessel/sector cap, and dedicated access privilege programs. The preferred alternative also supports the Council's Strategic Plan goal of reducing overcapacity in commercial fisheries. The fisheries themselves that would be altered by bycatch reduction programs are managed to allow harvest at sustainable levels. However, the fish that are harvested in these fisheries represent an irretrievable resource commitment, as do the inputs in terms of capital and labor (including energy and resources) needed to harvest and market these fish.

7.4 Energy Requirements and Conservation Potential of the Alternatives

The proposed action indirectly affects energy use primarily in the form of fossil fuels used to power surveillance craft and fishing vessels. Energy used in at-sea and aerial monitoring and enforcement activities is a direct effect. Change in the level of this type of monitoring is hard to predict because it depends on the types of management measures that will be implemented biennially and inseason. Generally, the RCAs, which were first implemented in late 2002, require more surveillance to be effective. However, VMS, implemented at the beginning of 2004, will compensate for the increased surveillance need because vessel positions can be remotely monitored. Finally, the availability of ships and aircraft to conduct surveillance, which is partly contingent on U.S. Coast Guard mission priorities, will also dictate the level and the number of patrols, affecting energy use. For these reasons, it is difficult to predict how energy use would change from baseline conditions. The proposed action indirectly affects fishing activity, and thus, the consumption of fuel by fishing vessels. Fuel consumption is likely to correlate with harvest levels and with the number of vessels participating in the fishery. The preferred alternative is intended to reduce bycatch through several different management tools, including capacity reduction. As vessel participation is reduced in the commercial fisheries over time, vessel fuel consumption will also be reduced. None of the alternatives, including the preferred alternative, speak to capacity reduction in the recreational fisheries, which are primarily managed by the states. It is difficult to predict vessel fuel consumption in the recreational fisheries, but it is not likely to be reduced as a result of the preferred alternative.

7.5 Urban Quality, Historic Resources, and the Design of the Built Environment

The Newport Beach dory fleet, which may be indirectly affected by the proposed action, is considered a historic resource locally. Although the proposed action does not directly affect urban quality, other historic resources, or the design of the built environment, it may have indirect effects. Fishing fleets add to the character of many West Coast communities and are a determining factor in investment in port infrastructure, including the maintenance of navigation channels. Aside from any broad effects on community income, continued decline in the number of vessels, which is likely to occur under more restrictive management measures, could affect infrastructure investment and might contribute to changes in the character of waterfront areas. Significant adverse impacts are unlikely.

7.6 Possible Conflicts Between the Proposed Action and Other Plans and Policies For the Affected Area

Groundfish are caught incidentally in fisheries managed under other Council FMPs (for salmon, coastal pelagic species, and highly migratory species). Similarly, those species are caught incidentally in groundfish fisheries. The preferred alternative, which is intended to reduce all bycatch, groundfish and non-groundfish. Regulatory programs to implement the preferred alternative may make small amounts of commercial non-groundfish species available to fisheries managed under Council FMPs. Conversely, as more information becomes available on the bycatch of groundfish, particularly overfished species, in non-groundfish fisheries, harvest in those fisheries may need to be restricted to reduce groundfish bycatch. The Council may also need to coordinate with the states and tribes to reduce groundfish bycatch in state-managed non-groundfish fisheries. Ongoing use of GCAs to minimize overfished species bycatch will require continued coordination between the Council, states, and five West Coast national marine sanctuaries on areal fishing closures.

7.7 Significant and Unavoidable Adverse Impacts

The EIS must include a discussion of those adverse effects that cannot be avoided (40 CFR 1502.16). This discussion focuses on potentially significant adverse impacts of the proposed action, as implemented by the different alternatives. Council on Environmental Quality (CEQ) regulations at 40 CFR 1508.27 define "significantly" in terms of both context and intensity, and provide ten factors to consider when evaluating the intensity of an impact. NOAA provides agency guidance in determining significant impacts of fishery management actions in administrative order NOAA Administrative Order (NAO) 216-6 at §6.02, which expands on the CEQ definition. These criteria focus on the components of the human environment most likely to be affected by these types of actions.

Between these two sources, the primary area where the preferred alternative could potentially have significant effects on the human environment is under CEQ regulatory considerations at 40 CFR 1508.27(b)(6), "*the degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about future consideration.*" The preferred alternative sets guidance on future bycatch

mitigation programs, which is to be included in the FMP. Under the preferred alternative, the Council will give precedence to incentives-based, rather than command-and-control bycatch mitigation programs. The preferred alternative would amend the FMP to:

- Set criteria for phasing in sector bycatch caps that would include: monitoring standards, full retention programs, and individual vessel incentives for exemption from caps
- Set standards for future development of IFQ programs to ensure that those programs are designed, in part, to reduce bycatch and bycatch mortality.
- Acknowledge the Strategic Plan's goal of reducing capacity in the commercial fisheries into the FMP: "*To have a level of harvest capacity in the fishery that is appropriate for a sustainable harvest and low discard rates, and which results in a fishery that is diverse, stable, and profitable. This reduced capacity should lead to more effective management for many other fishery problems. For the short term, adjust harvest capacity to a level consistent with the allowable harvest levels for the 2000 fishing year, under the assumption that stock rebuilding will require reduced harvests for at least the next two decades. Maintaining a year-round fishery may not be a short-term priority.*"

Given these elements of the preferred alternative, this action may be viewed as establishing precedents for future actions. Some of these future actions may have a significant effect on the human environment, most likely with positive benefits for the physical and biological environments and both negative and positive effects on the socioeconomic environment. Over the longer term, the socioeconomic environment should benefit from increased groundfish abundance and fishing opportunity, as well as more direct individual control over and responsibility for fishing behavior.

This EIS is also related to actions taken under Amendments 16-2 and 16-3, which set rebuilding plans for eight overfished species into the FMP. Under 40 CFR 1508.27(b)(7), the action must be evaluated in terms of "*whether the action is related to other actions with individually insignificant but cumulatively significant impacts.*" While a rebuilding plan for an individual species may not have a significant effect on the environment, all eight rebuilding plans together with the preferred alternative in this EIS could cumulatively have significant effects on the human environment. Both the rebuilding plans and this bycatch EIS set Council policy direction for the foreseeable future, reducing both total mortality and bycatch mortality. The rebuilding plans require the reduction in total mortality of both overfished stocks and more healthy groundfish stocks that co-occur with those overfished species. In the near-term, these reductions in total mortality level may have a significant effect on fisheries participants. Over the longer-term, however, sustainable harvest levels are expected to increase, showing a positive effect of the actions on the biological environment and a correlated positive effect on the socioeconomic environment.

The proposed action may potentially impact biodiversity and ecosystem function within the affected area (NAO 216-6 §6.02g). The 80+ groundfish species managed under the FMP are each part of intricate food web interactions between each other and non-groundfish species. The effect of reducing bycatch and bycatch mortality of groundfish on biodiversity and ecosystem function depends on many factors, including environmental conditions. Prior to 2000, Federal groundfish gear restrictions primarily focused on trawl mesh restrictions intended to reduce bycatch of juvenile groundfish.

The impacts of the preferred alternative, particularly in combination with overfished species rebuilding plans could have a variety of unpredictable effects on biodiversity and ecosystem function. For example, adult lingcod and rockfish tend to prey on juvenile rockfish. The lingcod stock has been rebuilding fairly swiftly and lingcod may well be preying on rockfish species managed under rebuilding plans. In general, the preferred alternative is intended to better account for total mortality and to ensure that those fish that are caught in the fishery are retained for use. The preferred alternative may result in an overall increase in groundfish biomass within the California Current marine ecosystem. Biodiversity and ecosystem function within that ecosystem may be more affected over the longer term by climate changes and human effects on the marine environment from activities other than fishing.

The proposed action could have significant social or economic impacts interrelated with the potential significant natural or physical environmental effects discussed above (NAO 216-6 §6.02h). In the short term, significant socioeconomic effects, resulting from lost fishing opportunity via capacity reduction programs, could occur. As discussed above, this action in combination with the rebuilding plans is expected to ultimately result in larger-sized groundfish stocks, with higher annual sustainable mortality levels. Greater longer-term fishing opportunities may have significant socioeconomic benefits. However, the persons and communities that ultimately benefit from improved groundfish stock conditions will be different from those who are enduring the negative effects of overfished species rebuilding now. Rockfish rebuilding plans are necessarily longer in time frame than for short-lived species under rebuilding plans in other parts of the country. Stocks that are more abundant 20-30 years from now will not benefit communities in the near term.

Overall, the proposed action is beneficial. This net benefit, although unquantified, will occur if long-term benefits from reducing bycatch and bycatch mortality outweigh the short-term costs to fishery participants.

7.8 Mitigation

An EIS must discuss "means to mitigate the adverse environmental impacts" stemming from the proposed action (40 CFR 1502.1(h)), even if the adverse impacts are not by themselves significant. The preferred alternative is itself a mitigative program intended to mitigate potential adverse environmental impacts that could result from taking no action on bycatch planning and minimization. Bycatch mitigation tools available to the Council and NOAA Fisheries fall into three major categories: those that reduce unintended catch, those that may reduce mortality of unintended catch, and those that reduce waste of unintended catch. A fourth category could also be considered (reduce unobserved gear-related mortalities) but very little information is available to address that category. The magnitude of effects for the first three categories is difficult to predict, and even the direction of effect may not be apparent or predictable.

Tools to mitigate unintended catch are likely to affect species abundance and ecosystem structure. Some of these tools have more selective effects and may affect relatively few species of similar size and shape. Others have broad effects on a variety of species and sizes. These effects are analyzed in Chapter 4 of this EIS for a set of species that represent various trophic levels and geographic areas within the affected environment. Potential mitigation measures are discussed here with respect to the components of the

human environment potentially affected by the proposed action.

Habitat and ecosystem: Although adverse impacts to groundfish habitats may be caused by a range of natural events and human activities, mitigation measures within the scope of NOAA Fisheries' authority would address fishing-related impacts. The GCAs, currently used to reduce overfished species bycatch, also reduces related adverse impacts from groundfish fishing gear to benthic habitat within its boundaries, because bottom trawling is prohibited in these areas. In a separate action, NMFS is preparing an EIS to identify and describe groundfish EFH, and identify habitat areas of particular concern (HAPCs) within EFH. The alternatives in the EFH EIS will include measures to minimize adverse effects on EFH caused by fishing.

Groundfish species: As mentioned earlier in this chapter, the preferred alternative and all of the other alternatives to no action are themselves mitigative programs. While the preferred alternative does not affect total groundfish harvest, it would reduce groundfish bycatch and bycatch mortality. The preferred alternative is also intended to improve the quantity and quality of bycatch data. If bycatch reporting and subsequent estimates of bycatch mortality improve, the Council and NOAA Fisheries will be able to more accurately manage to total harvest levels. Improved bycatch data will better ensure that unaccounted-for mortality does not occur. Dedicated access privilege programs recommended under the preferred alternative would likely result in allocations of both target and bycatch species. In addition to limiting total mortality, these types of management programs could provide incentives for fishermen to find ways to reduce their bycatch rates, since they would more directly bear the cost of producing bycatch. Gear modifications to reduce vessel bycatch rates would also be encouraged through these programs and through sector/vessel bycatch programs. In reducing bycatch overall, the preferred alternative should also be mitigative for bycatch and bycatch-mortality of non-groundfish species.

Socioeconomic sectors: Adverse socioeconomic impacts are attributable to increases in fisheries participation costs associated with more aggressive monitoring programs, increases in fisheries participation costs and safety concerns associated with fishing grounds closures in MPAs, and restriction of access to fishing opportunities through capacity reduction programs. One general form of mitigation is to compensate fishermen directly through subsidies or the provision services, such as job retraining programs for displaced workers. While the alternatives, including the preferred alternative, contemplate a variety of cost-increasing fishery management programs, programs do not include fisherman compensation for those costs. Over the longer term, the preferred alternative would reduce the number of vessels participating in the fishery, ultimately making fishery participation more profitable for those who remain in the fishery. Vessels operating at more profitable levels are expected, under the preferred alternative, to bear more of the cost of managing their fishery, including for bycatch monitoring and mitigation programs.

7.9 Environmentally Preferred Alternative and Rationale for Preferred Alternative

NEPA regulations, at 40 CFR 1505.2(b), state that the ROD will identify an alternative or alternatives considered "environmentally preferable." In order to inform the public and facilitate preparation of the ROD, the rationale for identifying Alternative 6 as the

environmentally preferable alternative is summarized here. Guidance, in the form of *Forty Most Asked Questions Concerning CEQ's NEPA Regulations*, states that the environmentally preferable alternative is "the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural, and natural resources" (Question 6.A).

Alternative 6 represents the environmentally preferable alternative because it would implement the largest-sized MPAs of the alternatives and because it is estimated to have the least effect on biological resources in terms of impacts to habitat and ecosystem, and in terms of harm to protected species. However, in comparison to the other alternatives, Alternative 6 could have a greater adverse impact, both in the near- and longer-term, on West Coast fishing communities substantially engaged in or dependent on groundfish fisheries. Alternative 6 takes the command-and-control approach of closing large marine areas to all groundfish fishing, thereby reducing both directed and incidental take of all species by groundfish fishing vessels. Implementing these large closed areas would also require reducing total available groundfish harvest for fishing in open areas, to ensure that stocks are not locally depleted in the open areas. Fishing communities located closest to the closed areas would suffer the greatest impacts. Their fishery participants could be expected to either leave the fishery altogether or to remain in the fishery at the increased operating costs and increased safety risks associated with traveling farther at sea to reach open fishing areas. Combined with substantial declines in allowable groundfish harvest over the past five years, bycatch mitigation measures under Alternative 6 could notably affect the character and viability of these communities. NEPA describes national policy in terms of the human environment, which includes the relationship of people with the natural and physical environment (40 CFR 1508.14). Fishing, whether commercial, recreational, or ceremonial is a direct expression of this relationship.

The Council identified a preferred alternative at its April 4-9, 2004, meeting in Sacramento, California. The Council-preferred alternative, Alternative 7, combines bycatch mitigation programs from Alternative 1 (continue existing bycatch mitigation programs,) Alternative 4 (vessel/sector bycatch cap programs,) and Alternative 5 (implement dedicated access privilege programs for appropriate sectors). This alternative is intended to acknowledge and continue the Council's ongoing bycatch mitigation strategy, plus focus future Council action on new regulatory programs to reduce bycatch through vessel accountability and capacity reduction. The Council has not discussed most of its bycatch mitigation program in its FMP, nor has it recently evaluated whether its FMP should set parameters for capacity reduction programs that require those programs to accomplish goals unrelated to capacity management. While Alternative 7 would not have the same immediate negative socioeconomic effects of Alternative 6, it will result in a longer-term restructuring of the fisheries so that each sector is managed with bycatch reduction programs appropriate to that sector. Thus, Alternative 7 takes an incentives-based approach to bycatch reduction to ensure that Magnuson-Stevens Act bycatch reduction and community involvement fishery management goals are met.